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EXAMINER

HUNTSINGER, PETER K

ART UNIT

PAPER NUMBER

2624

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/855,943

Applicant(s)

MIYAZAKI, TAKAO

Examiner

Peter K. Huntsinger

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 5/16/01 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5/16/01.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-3, 6, 11-17, 19, 20, and 22-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Tanaka et al. U.S. Patent 6,123,341.

Referring to claim 1, Tanaka et al. disclose a serial printing method for recording an image on a recording material one line by one line, said line including one or more rows and said line being recorded by moving a recording head in a width direction of said recording material, said serial printing method comprising the steps of: recording said row with said recording head (Fig. 2, col. 8, lines 59-67); detecting whether or not a print defect occurs on said recorded row (S4 of Fig. 10, col. 12, lines 20-33); and

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performing correction recording relative to said row on which said print defect occurs (Fig. 12, col. 13, lines 52-55)

Referring to claim 2, Tanaka et al. disclose a serial printing method according to claim 1, wherein said line includes a plurality of said rows respectively recorded with recording elements of said recording head (Fig. 2, col. 8, lines 59-67)

Referring to claim 3, Tanaka et al. disclose a serial printing method according to claim 2, wherein said print defect of said row is detected by measuring a density of each pixel constituting said row (col. 11-12, lines 56-57, 35-38), and said correction recording is performed relative to said pixel on which a lack of density occurs (col. 1-2, lines 64-67, 1-7). Tanaka et al. does not specifically state measuring the density of a pixel but from the definition of a pixel as the smallest unit of resolution, it is inherent that the image sensor of Tanaka et al. measures pixels.

Referring to claim 6, Tanaka et al. disclose a serial printing method according to claim 1, wherein said recording head is an ink-jet recording head for recording said image by jetting ink to said recording material (col. 11, lines 52-54).

Referring to claim 11, Tanaka et al. disclose a serial printing method for recording an image on a recording material one line by one line, said line including a plurality of rows of which recording is performed by moving a recording head in a sub-scanning direction which is a width direction of said recording material, and said recording head having a plurality of recording elements arranged in a main-scanning direction perpendicular to said sub-scanning direction, said serial printing method comprising the steps of: recording said rows with said recording head (Fig. 2, col. 8,

lines 59-67); detecting the broken recording element among said recording elements, said broken recording element being impossible to record due to its failure (S7 of Fig. 10, col. 12, lines 26-32); and recording said row to be recorded with said broken recording element, by moving said recording head again and by using another normal recording element among said recording elements (Fig. 12, col. 13, lines 52-59).

Referring to claim 12, Tanaka et al. disclose a serial printing method according to claim 11, wherein said broken recording element is detected by measuring a density of said row (S7 of Fig. 10, col. 12, lines 26-32)

Referring to claim 13, Tanaka et al. disclose a serial printing method according to claim 11, wherein said broken recording element is detected by measuring a density of a test pattern recorded by said recording head (Fig. 3, col. 9, lines 1-6).

Referring to claim 14, Tanaka et al. disclose a serial printing method according to claim 13, wherein said test pattern is arranged at a lateral side of said row in said sub-scanning direction (Fig. 3, col. 9, lines 1-6).

Referring to claim 15, Tanaka et al. disclose a serial printing method according to claim 13, wherein said test pattern is arranged at a downstream side of said row in said main-scanning direction (Fig. 3, col. 9, lines 1-6).

Referring to claim 16, Tanaka et al. disclose a serial printer including a carriage reciprocated in a sub-scanning direction which is a width direction of a recording material, a recording head held by said carriage, and moving means for moving said recording material in a main-scanning direction perpendicular to said sub-scanning direction, said recording head having M (M is an integer of two or more) recording

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elements arranged in said main-scanning direction to record said M rows on said recording material during the movement of said carriage, said serial printer comprising: density measuring means attached to said carriage and for obtaining a measured density of said row recorded by said recording head (line image sensor 37 of Fig. 9, col. 11, lines 56-57); failure judging means for judging the row as the defective row when said measured density is less than a prescribed value, said failure judging means judging the corresponding recording element as the broken recording element (S4 of Fig. 10, col. 12, lines 20-22); and control means for controlling drive of said recording element, reciprocation of said carriage, and movement of said recording material, when all of said recording elements are normal, said control means controlling the record under a condition that said recording element is moved every M rows, and when said failure detecting means detects said broken recording element, said control means controlling the record such that said recording material is moved by at least one row in said main-scanning direction to record with the normal recording element relative to said defective row, and successively the record being continued under a condition that said recording material is moved, in said main-scanning direction, in accordance with a number of the normal recording elements (Fig. 12, col. 13, lines 52-59).

Referring to claim 17, Tanaka et al. disclose a serial printer according to claim 16, wherein when a number of the consecutive normal recording elements is N (N is an integer more than one and less than M), recording is performed with the consecutive normal recording elements, the number of which is N, in a condition that said recording

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material is moved in said main-scanning direction every N rows (Fig. 12, col. 13, lines 52-59).

Referring to claim 19, Tanaka et al. disclose a serial printer including a carriage reciprocated in a sub-scanning direction which is a width direction of a recording material, a recording head held by said carriage, and moving means for moving said recording material in a main-scanning direction perpendicular to said sub-scanning direction, said recording head having M (M is an integer of two or more) recording elements arranged in said main-scanning direction to record said M rows on said recording material during the movement of said carriage, said serial printer comprising: density measuring means attached to said carriage and for obtaining a measured density of said row recorded by said recording head (line image sensor 37 of Fig. 9, col. 11, lines 56-57); failure judging means for judging the row as the defective row when said measured density is less than a prescribed value, said failure judging means judging the corresponding recording element as the broken recording element (S4 of Fig. 10, col. 12, lines 20-33); and control means for controlling drive of said recording element, reciprocation of said carriage, and movement of said recording material, when all of said recording elements are normal, said control means controlling the record under a condition that said recording element is moved every (M-J) rows (J is an integer less than M) to overlap the J rows, and when said failure detecting means detects said broken recording element, said control means controlling the record such that said recording material is moved by at least one row in said main-scanning direction to record with the normal recording element relative to said defective row, and

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successively the record being continued under a condition that said recording material is moved, in said main-scanning direction, in accordance with a number of the normal recording elements (Fig. 12, col. 13, lines 52-59).

Referring to claim 20, Tanaka et al. disclose a serial printer according to claim 19, wherein when a number of the consecutive normal recording elements is N (N is an integer more than one and less than M), recording is performed with the consecutive normal recording elements, the number of which is N , in a condition that said recording material is moved in said main-scanning direction every $(N-K)$ rows (K is an integer less than N) to overlap the K rows (Fig. 14, col. 16, lines 28-36).

Referring to claim 22, Tanaka et al. disclose a serial printing method for recording an image on a recording material one line by one line, said line including one or more rows and said line being recorded by moving a recording head of a printer in a width direction of said recording material, said serial printing method comprising the steps of: discharging said recording material on which said image has been recorded, from said printer (S2 of Fig. 10, col. 12, lines 13-16); setting said discharged recording material to said printer again (S3 of Fig. 10, col. 12, lines 16-19); detecting whether or not a print defect occurs on said recorded row (S4 of Fig. 10, col. 12, lines 20-22); and performing correction recording relative to said row on which said print defect occurs (Fig. 12, col. 13, lines 52-59).

Referring to claim 23, Tanaka et al. disclose a serial printing method according to claim 22, wherein said print defect of said row is detected by measuring a density of said row (S4 of Fig. 10, col. 12, lines 20-22).

Referring to claim 24, Tanaka et al. disclose a serial printer including a carriage reciprocated in a sub-scanning direction which is a width direction of a recording material, a recording head held by said carriage, and moving means for moving said recording material in a main-scanning direction perpendicular to said sub-scanning direction, said recording head recording a predetermined number of rows on said recording material in accordance with image data during the reciprocation of said carriage, said serial printer comprising: image-area detecting means for obtaining positional information of an image area of said recording material already recorded (line image sensor 37 of Fig. 9, col. 11, lines 56-57); data making means for making correction image data by calculating positional difference and inclination between said positional information of said image area and positional information of said image data, said data making means inclining and moving said image data in accordance with said positional difference and said inclination (S13 of Fig. 12, col. 13-14, lines 67, 1-6); density predicting means for obtaining a predicted density to be recorded on each portion of said image area, based on said correction image data (check pattern data of image data, col. 12, lines 20-22); density measuring means attached to said carriage and for obtaining a measured density of said portion of said image area during the movement of said carriage (line image sensor 37 of Fig. 9, col. 11, lines 56-57); operation means for comparing said measured density with said predicted density every portion, said operation means obtaining density difference of the defective portion having said measured density which is less than said predicted density (Fig. 8, col. 11, lines 39-49); and record correcting means for performing correction recording relative to

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said defective portion, said record correcting means moving said carriage again for the defective portion and driving said recording head in accordance with said density difference during the movement of said carriage (S17 of Fig. 12, col. 14, lines 20-25).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al. U.S. Patent 6,123,341 as applied to claim 1 above, and further in view of Aosaki et al. U.S. Patent 5,467,198

Tanaka et al. disclose a thermal printing head (col. 11, lines 52-54) but do not state utilizing thermosensitive recording paper. Aosaki et al. disclose wherein said recording material is a thermosensitive recording paper including a thermosensitive coloring layer, and said recording head is a thermal head for recording said image by heating said thermosensitive coloring layer (col. 7, lines 46-53). Tanaka et al. and Aosaki et al. are combinable because they are from the same field of printing systems. At the time of the invention, it would have been obvious to utilize the thermosensitive recording paper of Aosaki et al. with the printing system of Tanaka et al. The motivation for doing so would have been to reduce the size of the printer. Tanaka et al. is applicable to thermal printers, but doesn't provide details of the printer, and Aosaki et al.

simply provides the standard details. Therefore, it would have been obvious to combine Aosaki et al. with Tanaka et al. to obtain the invention as specified in claim 4.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al. U.S. Patent 6,123,341 as applied to claim 1 above, and further in view of Saito U.S. Patent 4,561,789.

Tanaka et al. disclose a thermal printing head (col. 11, lines 52-54) but do not state utilizing thermally melted ink. Saito discloses wherein said recording head is a thermal head for heating an ink ribbon from its back side, said image being recorded by transferring one of thermally melted ink and thermally sublimated ink onto a surface of said recording material (col. 3, lines 12-17). Tanaka et al. and Saito are combinable because they are from the same field of printing systems. At the time of the invention, it would have been obvious to utilize the thermally melted ink of Saito with the printing system of Tanaka et al. The motivation for doing so would have been to reduce the printing noise. . Tanaka et al. is applicable to thermal printers, but doesn't provide details of the printer, and Saito simply provides the standard details. Therefore, it would have been obvious to combine Saito with Tanaka et al. to obtain the invention as specified in claim 5.

7. Claims 7, 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al. U.S. Patent 6,123,341 and Noyes et al U.S. Patent 6,775,022.

Referring to claim 7, Tanaka et al. disclose a serial printer including a carriage and a recording head held thereby, said carriage being reciprocated in a sub-scanning

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direction which is a width direction of a recording material, and said recording head recording a predetermined number of rows on said recording material in accordance with image data during the forward movement of said carriage, said serial printer comprising: density measuring means attached to said carriage and for obtaining a measured density of a recorded portion when said carriage is moved (line image sensor 37 of Fig. 9, col. 11, lines 56-57); density predicting means for obtaining a predicted density to be recorded on said portion, based on said image data (check pattern data of image data, col. 12, lines 20-22); operation means for comparing said measured density with said predicted density every portion (S4 of Fig. 10, col. 12, lines 20-22); said operation means obtaining density difference when said measured density is less than said predicted density (Fig. 8, col. 11, lines 39-49); record correcting means for performing correction recording relative to the defective portion having said density difference, said record correcting means reciprocating said carriage again for the defective portion and driving said recording head in accordance with said density difference during the forward movement of said carriage (S17 of Fig. 12, col. 14, lines 20-25); and recording-material advancement means for advancing said recording material in a main-scanning direction perpendicular to said sub-scanning direction, in order to record the next predetermined number of the rows on said recording material (S19 of Fig. 12, col. 14, lines 27-30). Tanaka et al. does not disclose expressly the density measuring means measuring density when moved backwards. Noyes et al. disclose a carriage capable of measuring density while moving backwards (col. 86, lines 30-34). Tanaka et al. and Noyes et al. are combinable because they are in the same

field of printing systems. At the time of the invention it would have been obvious to allow the density to be measuring while the carriage is moving backwards in the system of Tanaka et al. The motivation for doing so would be to allow the printer to utilize only one density measuring means if needed. Therefore, it would have been obvious to combine Noyes et al. with Tanaka et al. to combine the invention as specified in claim 7.

Referring to claim 8, Tanaka et al. disclose a serial printer including a carriage and a recording head held thereby, said carriage being reciprocated in a sub-scanning direction which is a width direction of a recording material, and said recording head recording a predetermined number of rows on said recording material in accordance with image data during the reciprocation of said carriage, said serial printer comprising: density predicting means for obtaining a predicted density to be recorded on said portion, based on said image data (check pattern data of image data, col. 12, lines 20-22); operation means for comparing said measured density with said predicted density every portion, said operation means obtaining density difference of the defective portion having said measured density which is less than said predicted density (S4 of Fig. 10, col. 12, lines 20-33); record correcting means for performing correction recording relative to said defective portion, said record correcting means reciprocating said carriage again for the defective portion and driving said recording head in accordance with said density difference during the movement of said carriage (S17 of Fig. 12, col. 14, lines 20-25); and recording-material advancement means for advancing said recording material in a main-scanning direction perpendicular to said sub-scanning direction, in order to record the next predetermined number of the rows on said

recording material (S19 of Fig. 12, col. 14, lines 27-30). Tanaka et al. does not disclose expressly a first and second density measuring means for measuring density forward and backwards. Noyes et al. disclose first density measuring means disposed on one side of said recording head in said sub-scanning direction, said first density measuring mean obtaining a measured density of a recorded portion just after recording when said carriage is moved forward (photo sensor on 37b of Fig. 4, col. 16-17, lines 66-67, 1-2); second density measuring means disposed on the other side of said recording head in said sub-scanning direction, said second density measuring means (photo sensor on 37a of Fig. 4, col. 16-17, lines 66-67, 1-2) obtaining a measured density of a recorded portion just after recording when said carriage is moved backward (col. 86, lines 30-34). Tanaka et al. and Noyes et al. are combinable because they are in the same field of printing systems. At the time of the invention it would have been obvious to allow the density to be measuring while the carriage is moving backwards in the system of Tanaka et al. The motivation for doing so would be to allow the printer to utilize only one density measuring means if needed. Therefore, it would have been obvious to combine Noyes et al. with Tanaka et al. to combine the invention as specified in claim 7.

Referring to claim 10, Tanaka et al. and Noyes et al. disclose a serial printer according to claims 7 or 8 but do not specifically state measuring the density of a single pixel. From the definition of a pixel as the smallest unit of resolution, it is inherent that the image sensor of Tanaka et al. would measure pixels.

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al. U.S. Patent 6,123,341 and Noyes et al U.S. Patent 6,775,022 as applied to claims 7 and 8 above, and further in view of Terajima et al. U.S. Patent 6,785,026.

Tanaka et al. and Noyes et al. disclose utilizing a density measuring means. Tanaka et al. and Noyes et al. do not disclose expressly using a light emitting element for the density measuring means. Terajima et al. disclose wherein said density measuring means includes a light emitting element for illuminating said recorded portion, and a light receiving element for converting the reflected light into an electric signal (col. 1, lines 15-20). Tanaka et al., Noyes et al., and Terajima et al. are combinable because they are from the same field of printing systems. At the time of the invention it would have been obvious to implement the light emitting element into the density measuring means of the combination of Tanaka et al. and Noyes et al. The motivation for doing so would have been to reduce the power consumption present in other density measuring means and because of the conventionality of such devices. Therefore, it would have been obvious to obtain the invention as specified in claim 9.

9. Claims 18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al. U.S. Patent 6,123,341 as applied to claims 17 and 20 above, and further in view of Terajima et al U.S. Patent 6,785,026.

Referring to claim 18, Tanaka et al. disclose density measuring means but do not disclose expressly using a light emitting element for the density measuring means. Terajima et al. disclose wherein said density measuring means includes a light emitting

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element for illuminating said recorded row, and a light receiving element for converting the reflected light into an electric signal (col. 1, lines 15-20). Tanaka et al. and Terajima et al. are combinable because they are from the same field of printing systems. At the time of the invention it would have been obvious to implement the light emitting element into the density measuring means of Tanaka et al. The motivation for doing so would have been to reduce the power consumption present in other density measuring means and because of the conventionality of such devices. Therefore, it would have been obvious to obtain the invention as specified in claim 18.

Referring to claim 21, Tanaka et al. disclose density measuring means, but do not disclose expressly using a light emitting element for the density measuring means. Terajima et al. disclose wherein said density measuring means includes a light emitting element for illuminating said recorded row, and a light receiving element for converting the reflected light into an electric signal (col. 1, lines 15-20). Tanaka et al. and Terajima et al. are combinable because they are from the same field of printing systems. At the time of the invention it would have been obvious to implement the light emitting element into the density measuring means of Tanaka et al. The motivation for doing so would have been to reduce the power consumption present in other density measuring means and because of the conventionality of such devices. Therefore, it would have been obvious to obtain the invention as specified in claim 21.

10. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al. U.S. Patent 6,123,341 as applied to claim 24 above, and further in view of Noyes et al. U.S. Patent 6,297,888.

Tanaka et al. disclose density measuring means, but do not disclose expressly disclose measuring a border. Noyes et al. disclose wherein said image-area detecting means detects a border line between said image area and its surrounding portion by using said density measuring means to detect said image area, under a condition of moving said carriage and moving said recording material by said moving means (col. 15, lines 38-40). Tanaka et al. and Noyes et al. are combinable because they are from the same field of printing systems. At the time of the invention it would have been obvious to allowing measuring a border with the density measuring means of Tanaka et al. The motivation for doing so would have been to reduce the inaccuracy in alignment patterns. Therefore, it would have been obvious to obtain the invention as specified in claim 25.

11. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al. U.S. Patent 6,123,341 and Noyes et al. U.S. Patent 6,297,888 as applied to claim 24 above, and further in view of Terajima et al. U.S. Patent 6,785,026.

Tanaka et al. disclose density measuring means, but do not disclose expressly using a light emitting element for the density measuring means. Terajima et al. disclose wherein said density measuring means includes a light emitting element for illuminating said recorded row, and a light receiving element for converting the reflected light into an

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electric signal (col. 1, lines 15-20). Tanaka et al., Noyes et al., and Terajima et al. are combinable because they are from the same field of printing systems. At the time of the invention it would have been obvious to implement the light emitting element into the printing system of the combination of Tanaka et al. and Noyes et al. The motivation for doing so would have been to reduce the power consumption present in other density measuring means. Therefore, it would have been obvious to obtain the invention as specified in claim 25.

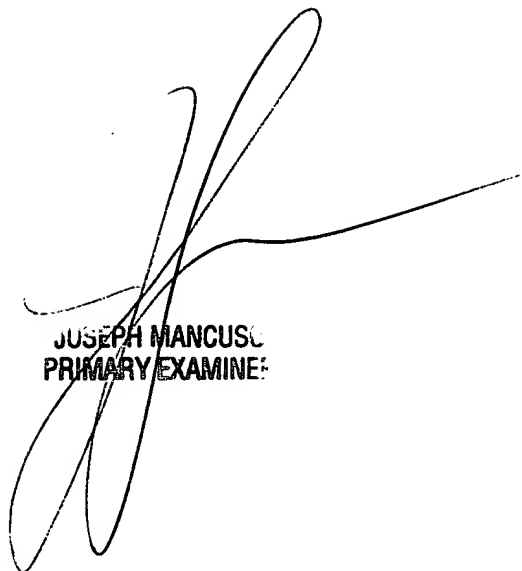
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter K. Huntsinger whose telephone number is (703)306-4088. The examiner can normally be reached on Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Moore can be reached on (703)308-7452. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PKH



JOSEPH MANCUSO
PRIMARY EXAMINEE